Objective

To evaluate the efficacy of topically-applied psoriasis drug formulations by measuring gene expression in Mattek's Human Psoriasis Tissue Model.

Methods

Tissues were treated with 50 µL of each formulation topically for 72 hours. After treatment, RNA was isolated from the Psoriasis tissues. RNA was utilized for gene expression analysis by quantitative PCR.
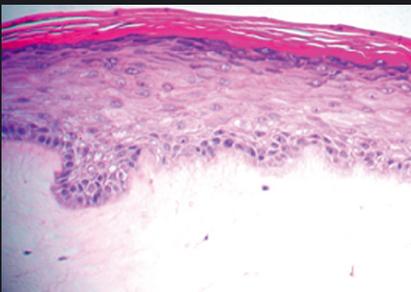

Figure 1. Histology of the Psoriasis Tissue Model. H&E stained cross-section showing that the tissue morphology closely parallels that of human psoriatic skin. The epidermis contains hyperproliferative basal keratinocytes, spinous, granular and stratum corneum layers. The dermis contains viable psoriatic fibroblasts (400x).

Results

Psoriasis tissues treated with Calcipotriol (0.005%), MG217, or Psoriasin Gel showed significant reductions in HBD-2, Elafin, and Psoriasin gene expression compared to untreated controls (Figure 2).
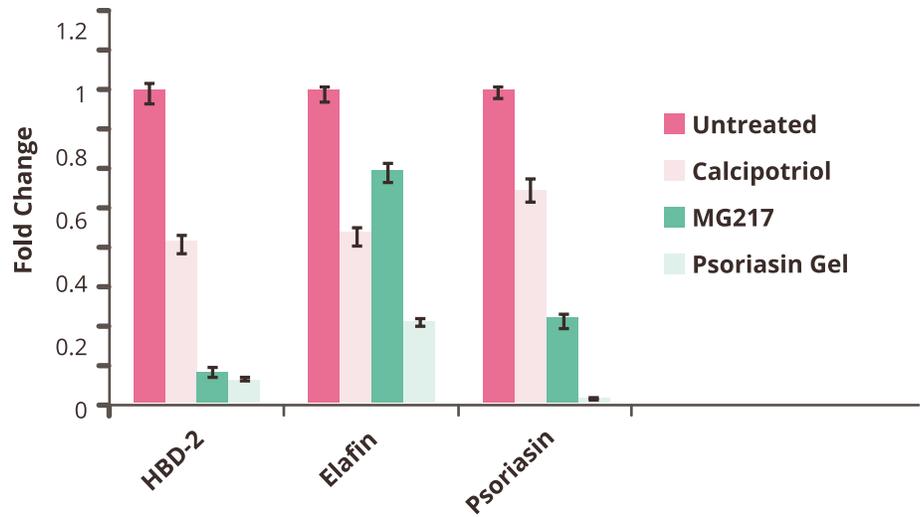

Figure 2. Gene Expression of Mattek's Human Psoriasis Tissue Model. Genes expressed from psoriasis drug treated tissues are compared to untreated controls. Data are presented as the average fold change of experimental replicates.

Conclusion

Evaluation of psoriatic biomarkers by quantitative PCR in the Human Psoriasis Tissue Model can be used to screen new drug formulations for efficacy and claims substantiation.